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Southwestern MEDICINE

OFFICIAL JOURNAL OF THE SOUTHWESTERN MEDICAL ASSOCIATION AND EL PASO COUNTY MEDICAL SOCIETY

Plan now to attend the Annual Conference of the Southwestern Medical Association, October 18-20 in El Paso

June, 1951

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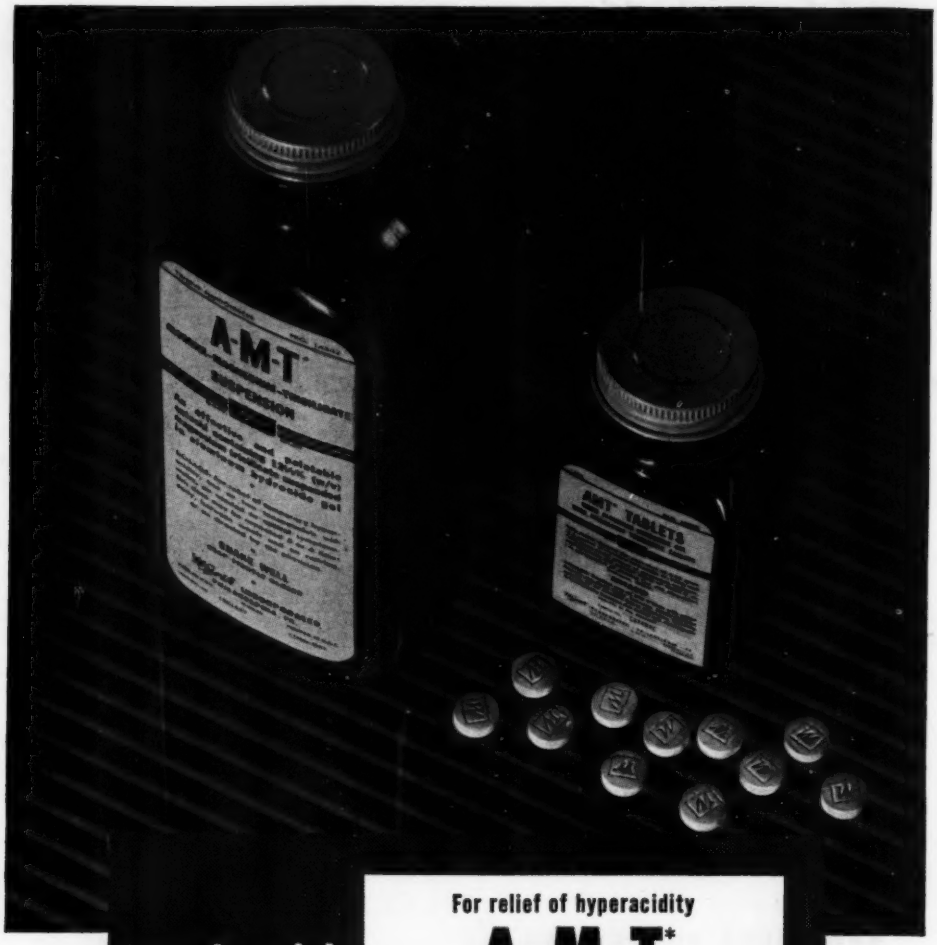

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WHEN WRITING ADVERTISERS PLEASE MENTION SOUTHWESTERN MEDICINE

I ADMIRE THE HUMAN RACE*

(An Editorial)

By Roger William Riis

I admire the human race. I do, indeed. Everybody is busy running us down, these days, for the mess they say we have made here and there and everywhere. Pshaw! That's short-range stuff, a worm's-eye view of our world. Over the marching and abundant centuries, we haven't made any mess. Far from it!

We have done and are doing a better job than anyone has any right to expect. We're all right!

From the beginning, we found ourselves alone in a vast universe, and not only alone but the only living thing on this planet which could realize its loneness. We realized it, gave it a good close look, and then turned our attention to making something practical and useful out of an unprecedented situation.

First of all, we found for ourselves a Light, a God, and we got a sense of direction, a goal to work toward. This was pretty clever of us, if you think of it carefully.

LIVING STANDARDS

We proceeded to set up standards for our living together. Early in our experience we made the revolutionary discovery that gentleness and kindliness were more practical than brute strength. No other species has ever found that out and used it as a model and practical code of conduct.

We have in actual fact no one we need answer to, beyond ourselves, and yet we observe our ideal standards in remarkable degree. We are honest and trustworthy one with another so that it is the exception, it is news, when we commit a theft. We are decent 99 per cent of the time, when we could easily be vile. With silence and mystery behind us and ahead of us, we make up gay little songs and whistle them, and our feet keep jig time to them. We look life and fate in the eye, and smile. I like that, and I admire the people who do it.

Alone among all living things, we have discovered Beauty, and we cherish it, and create it for eye and ear. Alone among living things, we have the power to look at our environment and criticize it and improve it.

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Finding it necessary to live together by the millions, we created for ourselves governing systems covering vast geographical spaces. Now we actually have the thrilling and terrific idea of a world government, a global government to bring justice to white and black, to Eskimo and Afrikander, rich and poor, not because any tribe is powerful and can exact justice, but because we have conceived and created the ideal of justice and plan it for all men. This is great. This is not the act of a little animal, or a mean animal. This is possible only to a great animal. We think in global terms. We inhabit a star, and we know it.

SURVIVAL

Finding that we have to work to stay alive, we work with ability beyond imagining. Out of the earth we take food, and improve that food year by year; we take heat, and light, so that darkness which lay upon the face of the earth is dispelled by man-made light. We enjoy all the myriad products of our unparalleled ingenuity.

Every morning the necessity for the day's work faces us. And we go and do a day's work, with an overall average effectiveness and perseverance that is amazing, considering many of the jobs.

Of a persistence, a daring and ingenuity impossible to surpass, we find ways to move easily under the water and through the air. Now we speculatively eye our neighboring planets. It should astound no one if man one day begins to move among these planets. How shall I not admire such a creature? Daunted by nothing, his horizons constantly recede, the territories of his possession and use expand and expand.

Whenever he comes to an impassable obstacle, an apparently final barrier, he goes to work at it and, in due time, surpasses it. If he has limits, I do not see where they are. I do not think he has limits. I think he is a child of the universe who inherits eternity. I think he is wonderful, I am his devoted partisan, and I am proud indeed to be one of him.

DIATHERMY DEADLINE SET FOR JUNE 30, 1952

Deadline on use of unapproved diathermy apparatus has been set for June 30, 1952 by the Federal Communications Commission.

The F.C.C. urges all users of unapproved diathermy apparatus to particularly note this date which is little more than one year distant and which was set five years in advance, on June 30, 1947, in order to give the users of such equipment more than sufficient time to make preparations and arrangements for a change-over to approved diathermy equipment.

Rules and regulations on diathermy drawn up after a study of the situation by a committee of members of the American Medical Association and the Federal Communications Commission were enacted on that date. All users of unapproved equipment were given five years in which they could use such equipment provided interference was not caused to authorized radio services.

Many users have not yet made arrangements to replace their unapproved apparatus, and it is expected that those who wait until the last to do this will find replacements unobtainable for a long time, during which they will be without diathermy apparatus. Manufacturer's representatives report that if orders were now in for the anticipated need, they would be unable to fill half of them before June 30, 1952.

The district office of the Federal Communications Commission is Room 500, U. S. Terminal Annex, Dallas, from which office any additional information may be obtained.

The Journal of the American Medical Association dated September 6, 1947, pages 30-31, contains a report of the Council of Physical Medicine which concerns these regulations.

DR. LELAND S. EVANS HEADS NEW MEXICO MEDICAL SOCIETY

Over 250 physicians, the largest group to attend an annual meeting, were present at the 69th annual session of the New Mexico Medical Society in Santa Fe, N. M., May 3-5.

Elected as officers of the Society for the coming year were Dr. Leland S. Evans of Las Cruces, president; Dr. Coy S. Stone, Hobbs, president-elect; Dr. Albert S. Lathrop, Santa Fe, vice-president; and Dr. L. G. Rice, Albuquerque, secretary-treasurer. Dr. I. J. Marshall, Roswell, was the retiring president. Drs. W. D. Dabbs of Clovis and W. E. Badger of Hobbs were selected as counselors.

The new president, Dr. Evans, whose outstanding presidential address is carried in this edition of Southwestern Medicine, has practiced medicine in Las Cruces since 1935 with the exception of three and one-half years service with the Army Air Forces.

Born in Bell County, Texas, in 1909, Dr. Evans attended local schools and was graduated from Temple High School in 1925. He received his B. A. from the University of Texas in 1929 and his M. D. from the University of Texas Medical School in 1933. He interned at the John Sealy Hospital in Galveston in 1933-34, with his second year of internship in El Paso at City-County Hospital, now El Paso General Hospital.

Leland S. Evans, M. D.

MOVED TO LAS CRUCES

Dr. Evans in 1935 moved to Las Cruces and there was associated with the late Dr. R. E. McBride, one of the organizers and founders of the New Mexico Medical Society. Entering the Army in 1942, he served overseas for 20 months in England and France and after three and one-half years of service returned to civilian life with the rank of major.

Dr. Evans was president of the Dona Ana County Medical Society in 1937-38 and secretary-treasurer from 1946-50. He was a member of the council of the New Mexico Medical Society from 1946-49 and is a member of the American Academy of General Practice. He was president of the Lions Club in Las Cruces in 1937-38.

Carlsbad was selected as a site for the 1952 state medical meeting with the Eddy and Lea County Medical Societies acting as joint sponsors. Dates for the meeting are May 8-10.

Selected as "Practitioner of the Year" was Dr. Carey B. Elliott, 64-year-old physician and surgeon of Raton, who was given the honor in a close vote over Dr. Tobias S. Espinoza of Espanola. A former physician in Cimarron, Doctor Elliott came to Raton in 1919. Dr. Elliott was born in Holden, Mo., attended Missouri Valley College and the University of Missouri and received his medical degree at Washington University in St. Louis. He has served as president of the New Mexico Medical Society and is president of the Raton Rotary Club.

New officers of the New Mexico Trudeau Society are Dr. Carl Mulky, Albuquerque, re-elected president; Dr. J. Gordon Strance, Albuquerque, vice-president; Dr. Bergere Kenney, Santa Fe, secretary-treasurer; and Drs. Junis Evans, Las Vegas, and Louis Levin, Albuquerque, executive committeemen.

SPEAKERS LISTED

Speakers at the various sessions were Dr. John F. Dammann, University of California Medical School; Dr. George C. Griffith, University of Southern California; Dr. N. Paul Isbell, University of Colorado Medical School; Dr. George Jacobson, University of Southern California; Dr. Victor E. Kleven, College of St. Joseph on the Rio Grande; Dr. Marcus A. Krupp, Stanford University Medical School; Dr. William H. Muller, University of Southern California; Dr. William R. Oakes, Los Alamos Medical Center; Dr. Howard B. Sprague, president of the American Heart Association; Dr. Marcy L. Sussman, University of Southern California; and Dr. F. J. Lewis, University of Minnesota Medical School.

At the first annual meeting of the women's auxiliary to the New Mexico Medical Society, the following officers were elected: Mrs. Philip L. Travers, Santa Fe, president; Mrs. I. J. Marshall, Roswell, vice-president; Mrs. R. C. Derbyshire, Santa Fe, corresponding secretary; Mrs. G. A. Slusser, Silver City, recording secretary; and Mrs. J. Hunt Burress, Raton, treasurer. Also elected was an executive committee consisting of Mrs. Carl Mulky, Albuquerque; Mrs. John Conway, Clovis; and Mrs. William Minton, Lovington.

Guest speaker at the meeting was Mrs. George Turner of El Paso, national treasurer and past president of the Texas women's auxiliary. She spoke on the obligations of medical auxiliaries.

BETTER PUBLIC RELATIONS THROUGH BETTER MEDICAL SERVICE

An Address by Leland S. Evans, M. D., Las Cruces, President of The New Mexico Medical Society, Delivered Before the Annual Meeting of The New Mexico Medical Society in Santa Fe in May

Some two and one-half years ago, several members of the New Mexico Medical Society became quite concerned about the complete lack of any Public Relations Program in the society. Having read about the wonderful work being done by the Colorado Medical Society in Public Relations, several members took advantage of an opportunity to visit the offices of the Colorado Medical Society in March, 1949, to learn first-hand about the wonderful program that was being carried on by the doctors of Colorado. They came home imbued with the spirit of service exemplified there and with the determination to try to institute a workable program in public relations.

At the annual meeting in Roswell of that year a program similar to that of Colorado, but on a much smaller scale, was instituted. Under the chairmanship of Dr. Bunch great strides were made during the first year of this program, and during the past year this program has gone forward with Dr. Malone as chairman.

Another factor which was most disturbing to many members was the inactivity of our various committees each year prior to 1949. The reports of these committees would usually not require over thirty minutes of the time allotted for the meeting of the House of Delegates. Some committees often had no report at all to make. One could not sit in the House of Delegates Session this morning without realizing what strides have been made and the vast amount of work that has been accomplished by our various committees. This is most gratifying; however, there are some of us who feel that we are only "scratching the surface" in our Public Relations Program.

AWAKENED BY THREAT

None of us like to be reminded of the fact that it was the threat of Compulsory Health Insurance that really awakened us to our duties to our communities and to the state. About the time that our Public Relations Program was started the American Medical Association was formulating plans for the National Education Campaign. The President of the American Medical Association that year was Dr. Ernest Irons. In an attempt to rally the doctors behind the program of the American Medical Association he used a phrase in one of his speeches, "Let us stand up and be counted". It is true that most of us have given very strong support to the program of the American Medical Association and we were certainly willing to "stand up and be counted". However, it would seem that some of the doctors felt that after the counting was over they could sit down and go about their usual duties. Once more we want to try to have everyone stand up but this time, instead, we want to go to work and get our job accomplished. If each one of you will give the officers whom you have elected today and the various committees of this society your whole-hearted support — that is, when you are called upon to do a job by your county society officers or when you receive a call or letter from the state office — it is our opinion that we will be justly proud of the work accomplished within the next year.

FIVE YEARS OF STRIVING

During the past five years the New Mexico Physician's Service has been striving, at times against very great odds, to make available to everyone in New Mexico a plan of voluntary health insurance to meet the needs of everyone in New Mexico. With the ever present threat of compulsory health insurance it would seem that every member of our state society would be eager to become a professional member of the New Mexico Physicians Service; yet, there are several in our state today who are not members of this organization. If each member of the New Mexico Medical Society would devote just a part of the time that the president of the board of trustees, Dr. Conway, has given to this cause, the New Mexico Physicians Service could realize goals that we have only been able to dream of. As stated in a report by Dr. Conway today a meeting was held last October between committees from the New Mexico Hospital Association and the New Mexico Physicians Service in an effort to work out a better understanding and to present to the public a unified program of pre-payment insurance in medical and surgical contracts as well as hospital coverage. The joint committee had a most harmonious meeting; however, to date there has been no follow-up on the plans discussed at that meeting. It would seem most important that our efforts along this line be pursued until there is a definite working arrangement between the New Mexico Hospital Association and the physicians of New Mexico.

As you all know voluntary health insurance is no longer on a trial basis. The overwhelming response given to the advertising campaign of the American Medical Association last fall was proof that by far the majority of people prefer some form of voluntary health insurance to a compulsory health insurance program. In New Mexico our program has been handicapped due to the fact that we have not had many large groups to sell to and due to the sparsely populated areas. Let us continue to support our voluntary health insurance program whenever possible.

SPECIAL MENTION

Time will not permit us to discuss all the activities of our various committees but a few of these committees deserve special mention. The committee on National Emergency Medical Service under the chairmanship of Dr. Anthony E. Reymont of Santa Fe has been active and during the past three years has tried to work out detailed plans pertaining to any disaster that might befall us. Let us hope that such plans will never have to be put into execution, but should it become necessary, we hope to be ready to meet any emergency that might arise.

Activities of the Rural Health Committee under the able direction of Dr. Stuart W. Adler as chairman has accomplished a great deal. Several communities which previously were without the services of a physician have been able to secure a doctor through the help of the committee on Rural Health and prospects are good that several other doctors will move into the communities that are in great need of them.

During the session of the New Mexico Legislature in 1949, several of us were quite chagrined to learn that the youngest county medical society in the state had sponsored a bill to repeal our Basic Science Act. It was not too difficult to have this bill killed in 1949. Since that time it has been discussed with the House

of Delegates on two different occasions. We have heard reports from members of our Basic Science Board and also the Basic Science Committee of this society. The more that I study the effects of this law the more I am convinced that it should either be repealed or greatly modified. Of course, we will have to admit that fewer doctors of medicine fail to pass the board than other branches of the healing art and that a great many more doctors of medicine do pass, but are we gaining our proportionate number of doctors of medicine who graduate each year from the medical schools as compared to the osteopaths who enter New Mexico? As much as we like our fair state and proclaim its scenic beauties we will have to admit that it is possible that many doctors who live some distance from here and who are desirous of settling in the southwest may not see these advantages as enough to off-set the requirements of taking the Basic Science Examination.

TWO CITIES

Since we have no medical school in our state, great effort will have to be made to find some way to send our own pre-medical students to medical schools with some assurance that they will return to the state to practice. Almost one-half of the doctors in New Mexico are practicing in Albuquerque and Santa Fe where less than one-fourth of the total population is. If you will exclude Albuquerque and Santa Fe and possibly one or two other communities, you will readily admit that there is a great shortage of doctors in our state. Whereas the national average is one doctor per eight-hundred and fifty people, in New Mexico the average is one doctor for fifteen hundred people. In some of our counties there is less than one doctor per two thousand people; and, of course, there are still a few communities well able to support a doctor that have no doctor. Certainly, we cannot expect one doctor per two thousand people to take care of the needs of these people as well as one doctor per one thousand people. It is my firm conviction that the acute shortage of physicians in the majority of New Mexico cities and counties is one of the basic causes for poor public relations. Therefore, only with adequate medical service will good public relations be established.

Dr. Harold S. Diehl, Dean of Medical Sciences at the University of Minnesota Medical School, has recently pointed out that if we want more rural doctors we will simply have to recruit more medical students from rural areas. Dr. Diehl's conclusions stem from a study of 545 Minnesota Medical School graduates. The study charted the graduates' present practice location in relation to the type of community in which they grew up. Three out of five medical students from rural areas later took up rural practice. Of the students from Minneapolis, St. Paul and Duluth fewer than one out of four went to the country to practice. With the increasing need for more physicians in the military service our present need for doctors will be increased. Our efforts will probably have to be directed along legislative ways to find places for a sufficient number who desire to study medicine. A medical school for our state may not seem feasible at this time, but certainly, it may have to be considered in the future if other means are not available.

During the past year your Public Relations Committee has urged repeatedly that each county medical society provide for a central telephone exchange to help patients locate their doctor or a doctor in case of emergency. In only a few instances has such a plan been started. Some of our strongest supporters are losing heart because too many doctors are still indifferent to this much needed service. Is it any wonder that so many people have so much confidence in other members of the healing art when some of our very best trained doctors do not see the need for making calls at unpleasant hours or who are unwilling to take part in a system assuring everyone that a doctor will be available when needed? Let us make a great effort in the next few months to see that such a plan is provided for in every community.

GREAT STRIDES

It is gratifying to report the great strides in one phase of the public relations work, and that is the Womens Auxiliary of the New Mexico Medical Society. Under the leadership of Mrs. Carl Mulky, who has worked untiringly, several county auxiliaries have been organized and are now functioning. In the years to come we will receive valuable aid and assistance from the members of the medical auxiliary.

One of the outstanding features of the Public Relations Program during the past two years has been the establishment and the active work done by the Board of Supervisors. Let us all continue to give the Board of Supervisors the support needed and to publicize the work done by this group of men. The service rendered to the physicians and to the patients by the Board of Supervisors is only one phase of better service to our patients that we must strive for continuously.

In December of last year the Board of Trustees of the American Medical Association donated $500,000 as a starting point for a voluntary fund to aid our medical schools. This fund has been growing steadily and many of you have already contributed to this most worthy cause. Let us urge you to send in your donations to the American Medical Education Foundation if you have not already done so, and as a service to our state let us not forget the important part that we doctors, individually, can have on matters of politics which affect all of us greatly. For those of you who might doubt this, let us remind you of what happened in Florida and Colorado last fall. Let us make our plans to take an active part in the campaign next year as individual citizens.

In conclusion, let us remind you how you may render another valuable service. When someone asks you various questions pertaining to our profession, take a little time and explain things to them in detail, especially if you should be asked why we feel that members of hospital staffs should be limited to qualified ethical members of our own Society. After all, there is a vast difference in the training we have.

ARTHRITIS

Combined Administration Of Desoxycorticosterone Acetate And Ascorbic Acid
I. Clinical Results In Rheumatoid Arthritis And Laboratory Studies

McKendry, J. B. R., et al., A. M. A. Arch. Int. Med. 87:190, 1951

As the authors state, almost any form of anti-arthritis treatment is effective in approximately 50 per cent of patients. Such were the results with combined desoxycorticosterone acetate-vitamin C therapy. Beneficial effects were in no way comparable to those obtained with ACTH or cortisone.

Material used in this study was supplied by Dr. Henderson, Schering Corporation.

Cleveland Clinic & Bunts Educational Inst.

Clinical Clippings, April, 1951.

GYNECOLOGY

Influence Of Vitamin A On Postmenopausal Cornification Of The Vaginal Epithelium

Platt, L. I., Am. J. Clin. Path. 21:38, 1951

Vitamin A, given orally and parenterally, reversed excessive vaginal cornification in 5 postmenopausal patients. The author believes that many women in this age group are deficient in vitamin A.

Clinical Clippings, April, 1951.

De Rebus Medicis Et Politicis

BY ROBERT B. HOMAN, JR., M. D., EL PASO, TEXAS
MEMBER OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION

FEDERAL SUBSIDY FALLACIES

Ralph Waldo Emerson once wrote the following, "It is as impossible for a man to be cheated by anyone but himself, as for a thing to be, and not to be, at the same time". "The Sage of Concord" wrote these lines many years ago, but they could have been written to apply to the American taxpayer of 1951! For, if there was ever a man who is cheating himself, coming and going, it is the American tax-payer — and that means **every citizen** of the U. S. A.

The fallacy of the Federal subsidy has debauched the intelligence and character of the American people to such an extent that the average tax-payer does not realize how much he is cheating himself. Over a period of 18 years, Americans have been educated to the philosophy of the hand-out-state, which, history reveals eventually resolves itself into the all-powerful state.

The tax structure of our Republic is designed to preserve local and State's rights for our people. The complete reversal of these principles of local responsibility and local authority has brought the tax-payer under the heavy burden of an expensive bureaucracy in Washington which perpetuates its authority by redistributing tax dollars, after a tremendous administrative deduction. A dollar in Federal aid requires a two dollar deposit in Washington through taxation. That is rather expensive "aid". Yet the tax-payer is likely to demand, and get, tax relief at the local and state level, and then turn to Washington to make up the deficit! Is anything more inconsistent?

FEDERAL SUBSIDIES

Of the 13.2 billion dollars spent by the various states in 1950, 1.9 billion dollars was derived from direct Federal subsidies to the states. Also, during 1950, the states borrowed 1.4 billion dollars to help finance the services demanded by the people. Increased state debt (up 50 per cent in the last 5 years), and increased Federal debt must be financed. The massive indebtedness, plus the interest thereon, must eventually be paid through taxation. The cost of all local and state services has increased directly in response to the inflationary trend in prices and salaries, combined with the increase in population. Is it logical, then, to demand lower taxation and, in the same breath, demand more service?

At the city and county government levels the same condition prevails. Local public health units are partially financed by Federal subsidy. The school system accepts funds from the same source for the school lunch program. It is said that only through Federal subsidy can this school program exist. Subsequently the school board announced a reduction in the local school tax rate! Who is fooling who in this case?

The medical profession, which has spent many thousands of dollars in fighting government control, is not without guilt in this matter of accepting Federal subsidy. One of the worst examples has been the subsidization of post-graduate courses at many medical colleges. Under this program, which has been in existence for several years, administrative costs, including the expenses of visiting distinguished speakers, are paid by subsidy. Furthermore, the doctor who registers for the various courses not only pays no tuition fee but receives a travel allowance and a per diem payment for attending — all from a Federal grant. Are there actually members of the profession who must be paid to attend courses in post-graduate education? About 2000 doctors have accepted this subsidy at the University of Texas Medical Branch at Galveston! Is it consistent to fight government subsidy on the one hand, and accept it on the other?

SUBSIDY DISAPPROVED

The House of Delegates of the Texas Medical Association in recent session put an end to this subsidy in Texas. The House of Delegates disapproved the acceptance of personal remuneration in any form and from any source, by members of the Association, for attendance upon post-graduate courses. It further called upon the State Health Department, through which these funds were disbursed, to discontinue such payment. The House authorized the Board of Trustees of the Texas Medical Association to under-write post-graduate courses in the three medical colleges in this state — if tuition fees do not pay the full expense.

This is a step in the right direction and should be followed up in many places where subsidies exist on false economic premises. Unless the tax-payers awaken, and act, they are likely to be "Federally-aided" out of their most important possession — their Freedom.

CATION EXCHANGE RESINS

Cation Exchange Resin In Chronic Circulatory Failure

Zatuchni, J., Am. Pract. 2:176, 1951

Exchange resins offer interesting possibilities for control of sodium retention. While such substances produce an effect similar to that of low-sodium, acid-ash diet, currently available resins are capable of removing cations other than sodium. Their use, therefore, should be restricted to patients in hospitals where adequate facilities for electrolyte studies are available.

Clinical Clippings, April, 1951.

DERMATOLOGY

Application Of Potassium Hydroxide To The Skin As An Aid In The Direct Examination Of Scales For Fungi

Kligman, A. M., A. M. A. Arch. Dermat. & Syphilol. 63:252, 1951

To facilitate collection of material from cornified lesions for direct microscopic examination for fungi, Kligman places a few drops of 10 per cent solution potassium hydroxide directly over the peripheral portion of the lesion. Prepared in this manner, an adequate amount of material can be removed by scraping. After completion of the procedure, excess potassium hydroxide solution should be removed by means of water or alcohol.

Clinical Clippings, April, 1951.

SURGICAL TREATMENT OF PEPTIC ULCER

By O. C. Brantigan, M. D. and R. C. Netterville, M. D.
Baltimore, Maryland

The true evidence of peptic ulcer is not known but it has been estimated that 4,000,000 people in the United States suffer from the disease.[1] Peptic ulcer or its stigma on the stomach or duodenum is found in from 5 to 20 per cent of all autopsies.[2] From postmortem work it has been estimated that 10 per cent of all people suffer from the disease at some time during their life.[51] It was formerly thought to occur more often in the stomach but probably is found most frequently in the duodenum. The male is affected from about three to one to five to one times more often than the female. It may occur in any age but the peak is between thirty and fifty years.[11]

There is a great tendency to consider all peptic ulcers together. However, the disease probably will be understood best if the ulcers in various locations are considered separately. In the surgical treatment it seems particularly important to distinguish between gastric and duodenal ulcers. Since jejunal ulcer is a complication of the treatment of duodenal or gastric ulcer, it is well to study it carefully from the etiologic point of view.

FACTOR UNKNOWN

The exact etiologic factor responsible for peptic ulcer is unknown. There are many well known theories comprising neurogenic, vascular, traumatic, and dietary or metabolic factors. Experimentally in dogs Mann and Williamson[41] produced chronic duodenal ulcers by transplanting biliary and pancreatic ducts into the ileum. By removal of the duodenum, anastomosis of the jejunum to the pylorus of the stomach and anastomosis of biliary and pancreatic ducts into the jejunum at a normal distance of the biliary ducts from the pylorus, jejunal ulcers were produced. Many workers have shown that jejunal ulcers can be produced with regularity when the alkaline biliary and pancreatic juices are prevented from bathing the newly created gastrojejunal stoma.[41,62,48] Wangensteen and associates[71,26,72] showed that the use of histamine in beeswax will produce ulcers, probably by causing a continuous increase of gastric juice that is high in acid concentration. Superficial erosions and ulcers have been produced by fat embolism and chronic arterial spasm.[74]

The mucosal glands of the body and fundus of the stomach secrete gastric juice of high pepsin and acid content. The pyloric mucosal glands comprising the distal one-fifth of the stomach are incapable of secreting pepsin or hydrochloric acid but secrete an alkaline material. Mucosal glands covering only a few millimeters about the esophageal opening are similar to pyloric glands.[32] The mucosa of the pyloric region is responsible for the hormone gastrin that stimulates secretion of the gastric glands in the body and fundus of the stomach during the intestinal phase of digestion.[49] Stimulation of gastrin from the pyloric mucosa can be induced by the intravenous injection of meat extract free of histamine; however, this stimulation is only about one-fourth as great as when these extracts are applied directly to the pyloric mucosa.[5] In man the secretion of gastric juice is constant but is increased by the necessity of digestion. The phases of gastric secretion are divided into the following categories: psychic or cephalic, gastric and intestinal. The secretion of gastric juice is under the control of the vagus nerve. Section of this nerve abolishes the psychic or cephalic phase, and reduces but does not eliminate the gastric or intestinal phase of gastric secretion. Gastric juice and especially hydrochloric acid have long been considered to have a definite etiologic role in the initiation and chronicity of peptic ulcer. The generally accepted treatments, both medical and surgical, have been directed at reducing the amount or concentration of this acid. Following gastric resection with gastrojejunostomy there has never been reported the formation of an ulcer in the duodenum. Clinically it is evident that there is a type of patient whose mental and emotional makeup as well as his physiologic and metabolic functions predispose the development of peptic ulcer.

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JEJUNAL ULCERS

Jejunal (gastrojejunal, marginal, and stomal) ulcers occur after gastrojejunostomy only as a complication of gastric surgery for gastric or duodenal ulcer. After the development of a peptic ulcer that requires surgery all predisposing and exciting etiologic factors must be almost the same in these patients. They at least have the constitutional predisposition and tissue susceptibility to peptic ulcer, also a tendency to increased amounts of gastric secretion with higher acid concentration. A study of these patients should reveal valuable information concerning the etiology of peptic ulcer. After gastroenterostomy it is estimated that jejunal ulcers occur in from 15 to 20 per cent of the cases.[54] Lewisohn[36] reported gastrojejunal ulcer in 34 per cent after gastroenterostomy. When adequate gastric resection is completed the development of jejunal ulcer is variable but much less often. Steinberg[61,62] found no jejunal ulcers in 339 patients who had subtotal gastrectomy. He attributed his success to adequate removal of the stomach and a short retrocolic efferent jejunal loop. Wangensteen[71] using practically the same operative procedure, recorded one jejunal ulcer in 351 patients. He attributed the success of short loop retrocolic gastrojejunostomy (gastroduodenostomy) to regurgitation of the stomach contents into the duodenum,[72] which in turn produces a secretion that controls the flow of alkaline pancreatic secretion. In resecting a relatively small amount of the stomach Reinhoff[56] observed the occurrence of jejunal ulcer in 9 per cent and suggested that 16 per cent of the patients developed jejunal ulcers. After adequate gastric resection Fallis and Warren[18] estimated the incidence of jejunal ulcer to be 0.5 to 10 per cent. When a gastric resection of the Finsterer[19] or Devine[13,14] pyloric exclusion type is done the incidence of jejunal ulcer is extremely high. Ogilve[50] believed it would occur in 30 to 40 per cent. By using the beeswax and histamine diphosphate method Shilling and Pearce[59] were able to produce chronic jejunal ulcer in all of nine dogs who had the pyloric exclusion type of gastric resection. Excision of the pylorus in three dogs resulted in healing of the ulcer in two. The Bancroft[3] modification of the pyloric exclusion operation removed the pyloric mucosa but is otherwise the same procedure. Since there is no increased incidence of jejunal ulcer when the Bancroft operation is used it seems that the pyloric mucosa, with its stimulation of gastric secretion, is the sole cause of the increased incidence of jejunal ulcer in the original pyloric exclusion operation. It was generally reported that jejunal ulcer occurred less often if the surgery was done for gastric ulcer,

whether the operation was gastroenterostomy or gastric resection.[18,54] Lanin[35] reported that high gastric resection with short loop retrocolic gastrojejunostomy will protect dogs from histamine-beeswax provoked ulcer.

SIZE OF STOMACH

The size of the stoma affects the rate of jejunal ulcer. Steinberg[61,62] believed that the small stoma predisposes to ulcer. This belief is strengthened by the statement of Dragstedt[17] that pure gastric juice from the fundus can digest all living tissue, i.e., stomach, duodenum, and jejunum. These tissues are normally protected from pure gastric juice by mucin and food, but an opening that permits a stream or jet of gastric juice to constantly strike a localized point probably would cause an ulcer. As previously mentioned, if the alkaline contents of the duodenum are diverted from the gastrojejunal stoma the occurrence of jejunal ulcer is greatly increased. Gastroenterostomy does not reduce the quantity of gastric juice but does reduce the concentration if the stoma is functioning properly. It can constantly be diluted by the alkaline duodenal contents, but the pyloric valve cannot retain the gastric secretion. This resection greatly reduces the quantity of gastric juice and acid and in turn lowers the concentration if the stoma functions properly. The reduction in the quantity of gastric juice results from a decrease in the secreting area of the body and fundic glands and the removal of pyloric mucosa that stimulates the intestinal phase of gastric secretion. The intestinal phase of gastric secretion is most important after subtotal gastric resection since there is less likely to be food in the stomach than in the normal stomach. One would expect a lower incidence of jejunal ulcer after resection than after gastroenterostomy.

CONSTANT FACTORS

It seems evident that the only constant factors governing the occurrence of jejunal ulcers are the amount and concentration of gastric juice and acid. The increased amount of gastric juice and concentration of acid may be actual, arising from an individual tendency toward gastric versus duodenal ulcer, from small stoma or efferent jejunal loop obstruction that retains secretions, from the humoral stimulation of gastric secretion by retained pyloric mucosa, from increased secretion stimulated by beeswax and histamine, or by an increase in secreting surface following gastroenterostomy compared to gastric resection or extensive resection compared to minimal resection. The increased amount of gastric juice and acid concentration may only be relative and result from less dilution by alkaline contents from the duodenum when it is either completely diverted or poorly mixed. The other, but less evident factor, is the length of the afferent (duodenal) jejunal loop taking part in the new gastric stoma. Mann and Williamson[41] showed the jejunum to be more susceptible to acid than the duodenum, and the work of Wangensteen and Steinberg seem to confirm this finding clinically.

The absence of ulceration of the duodenum after gastric resection and gastrojejunostomy, the experimental occurrence of duodenal ulcer when the biliary and pancreatic ducts are transplanted into the ileum, and the constancy of jejunal ulcers when alkaline duodenal contents are diverted from the new gastrojejunal stoma surely indicate that the concentration of acid is the most important etiologic factor in peptic ulcers.

PEPTIC ULCER

The treatment of peptic ulcer is essentially a medical regimen. Surgical treatment is reserved for the treatment of complications such as hemorrhage, duodenal or pyloric obstruction perforations, and intractability to medical treatment. There will always be a wide variation in the interpretation of intractability to medical treatment. Therefore, a great difference of opinion will exist concerning indications for surgery on the basis of chronicity of the ulcers. As the mortality and morbidity of surgery decrease and the cure rate improves the indications become less rigid. Surgical treatment is sometimes instituted because of the fear of malignancy in gastric ulcer but never in the duodenal type.

Most workers have abandoned the older methods of surgical treatment of peptic ulcer, such as the various pyloroplastic operations, local excision or destruction of the ulcer with or without gastroenterostomy, and the gastroenterostomy without vagus section. Nevertheless, under unusual circumstances one may be obliged to employ one of these methods. Local excision of the ulcer without other gastric surgery in no way changes any of the factors influencing the development of ulcer. Therefore, the operation usually is followed by recurrence. The pyloroplasty operations eliminate possible obstruction at the pylorus and assure adequate emptying of the stomach; it also permits the reflux of alkaline duodenal contents into the stomach but in a reversed peristaltic manner. The operation changes no other physiologic or anatomic condition. The gastroenterostomy eliminates possible obstruction to the stomach and assures adequate emptying of the stomach so long as the stoma is large enough and there is no obstruction to the efferent jejunal loop. There is a reflux of the alkaline duodenal contents into the stomach by normal peristaltic activity. There is no other physiologic or anatomic change.

SURGICAL TREATMENT

The present methods of surgical treatment for peptic ulcer consist of subtotal gastric resection, vagus section rarely alone but usually accompanied by posterior gastroenterostomy, and total gastric resection. The individual success obtained by a particular operation will materially influence the surgeon in his choice of treatment, especially with regard to subtotal resection when opposed to vagus resection with or without gastroenterostomy. The type of ulcer, the technical ease of operation, and the intractability of the ulcer will also influence the choice of operation.

If a subtotal gastric resection is chosen as the operation of choice one must decide between the Polya or Hofmeister-Finsterer type of resection. All of the pylorus or pyloric mucosa must be removed. In the vast majority of patients it is possible and it is always desirable to remove the ulcer. Whether the afferent loop is to be long or short, or whether the anastomosis is retrocolic or antecolic must be decided. The authors have preferred the Polya type of resection with antecolic anastomosis, with the afferent loop at the lesser curvature and as short as compatible with the anatomy. In the Polya type of resection the alkaline contents of the duodenum must mix within the stomach. The stoma will always be maximum in diameter (diameter of jejunum) if care is taken to prevent kinks or encroachment upon the efferent jejunum. These conditions are best controlled if the afferent loop is suspended from the greater curvature of the stomach. The antecolic anastomosis is easier than the retrocolic and apparently offers less chance for obstruction or kinking of the efferent lumen. It removes the possibility of gastrojejunocolic fistula. However, the work of Steinberg,[62] Wangensteen,[71,72] and Penick[52] recommending a short afferent loop with retrocolic anastomosis is practically impeccable. It appears that the functioning of the gastrojejunal stoma is the important factor, and not whether it is antecolic or retrocolic or whether the afferent loop is short or long.

TANGIBLE CAUSE

Since the one tangible cause of peptic ulcer as known today is the amount of gastric juice and its concentration of acid, the treatment is directed toward reducing or eliminating the acid. Subtotal resection reduces the amount of gastric juice and acid by removing a large number of the secreting glands, by eliminating the formation of gastrin by the pyloric mucosa and thus removing the intestinal phase of gastric secretion, and by mixing the alkaline duodenal contents constantly with the gastric juice and acid produced by the remaining stomach. Achlorhydria is not produced by high subtotal gastric resection, but the free acid content is greatly reduced.[42] It protects against the histamine provoked ulcer. The occurrence of jejunal ulcer is from 0 to about 10 per cent. The mortality rate varies greatly and ranges from 1.3 per cent reported by Steinberg[62] in a highly selected group of patients to 31 per cent described by Gaviser[21] in a group of patients who had active massive bleeding. The mortality rate depends upon many factors: the condition and age of the patient, location of the ulcer, perforation into the pancreas, pyloric obstruction, and hemorrhage. Satisfactory end results can be expected in 90 per cent or more of the patients.[1,37,69,64]

SURGICAL APPROACH

If vagus resection is selected as the operation of choice, one must determine whether the surgical approach will be transabdominal,[12,15,16,70,71] through the thorax,[45] or of the thoracoabdominal type.[41,42,23,24] It must be decided whether vagus resection alone is to be used or whether it will be combined with other gastric surgery, especially gastroenterostomy. The abdominal approach permits easy access to the pathologic condition under treatment. If gastroenterostomy is to be added it is accomplished easily. By the abdominal approach the vagus nerve is difficult to find and resect completely in about 10 per cent[8] of the patients. The thoracic incision gives easy access to the vagus nerve in all cases but prevents examination of the pathologic condition being treated. It does not permit gastorenterostomy. The thoracoabdominal approach affords ready access to the vagus nerves in all cases. It permits examination of the pathologic condition under treatment and the completion of gastroenterostomy or other gastric surgery if desired. However, the pathologic condition is not nearly as accessible nor is it as easy to do the gastroenterostomy. The magnitude of the operation is much greater than through an abdominal incision and probably will carry a higher mortality and morbidity rate than the abdominal approach. Vagus resection alone is so often followed by the gastric retention which nullifies many of its good effects that most workers now believe that gastroenterostomy must be added in almost all cases. The vagus resection abolishes the cephalic phase of gastric secretion; it also reduces the gastric and intestinal phases but does not abolish them. It definitely diminishes night secretion and basal secretion of acid. Vagus nerve resection with gastroenterostomy does not produce achlorhydria. The incidence of jejunal ulcer is unknown. There is a return of some symptoms in 15 to 20 per cent.[1] Vagus nerve resection produces ulcers in rabbits.[6,4] It also fails to protect against histamine provoked ulcer or the Mann-Williamson.[4,66] The mortality rate is less than for subtotal resection. In a series of 2500 cases reported at the 1949 meeting of the American Medical Association the mortality rate was 1.7 per cent.[1] Satisfactory end results are reported in approximately 80 to 85 per cent of patients.[1] Reports are not uniformly as good and the followup period is not so long as in gastric resection.

COMBINATION

The combination of subtotal resection and vagus nerve resection has been proposed and practiced. A high subtotal resection with an adequate vagus nerve resection will produce achlorhydria. Neither operation alone will do so. In such a procedure the unfavorable aspects of both operations are combined; in vagus resection the common complications are retention, diarrhea, intestinal colic, and dysphagia; in subtotal gastric resection the usual complications are retention, intolerance of milk, inability to eat large meals, inability to gain weight, and the dumping syndrome. The magnitude of the operation is greater and therefore, one should expect a higher mortality than in either operation practiced alone.

If one pursues the treatment of peptic ulcer to its ultimate conclusion the next step is total gastrectomy. There can then be no recurrence of peptic ulcer. However, the mortality is high and the associated postoperative difficulties are so great that one need not seriously consider it at this time.

Chronic gastric ulcer which was formerly thought to be more common than duodenal ulcer is now conceded to be less frequent.[2,11,17] Gaviser[21] found almost four duodenal ulcers to one of the gastric type. The gastric ulcer may occur anywhere in the gastric mucosa but is more frequent in the region of the lesser curvature; however, it is often found in the prepyloric region. The gastric ulcer is less prone to bleed than the duodenal ulcer. If massive hemorrhage occurs from gastric ulcer it is usually from an ulcer on the lesser curvature of the stomach. The acidity of the stomach is higher than normal in the patient with gastric ulcer but it is less than is found in the patient with duodenal ulcer. The presence of both gastric and duodenal ulcers is rare. The possibility of malignancy is an ever present fear when gastric ulcer is diagnosed. Walton[70] found that 10.5 per cent of the gastric ulcers in his series became malignant, whereas Ransom[53] reported 10.1 per cent were malignant. Wangensteen[71] wrote that 20 per cent of the prepyloric gastric ulcers were malignant and the incidence was greater in ulcers of the lesser curvature. It is generally agreed that it is impossible to detect the presence or absence of malignancy by clinical examination or by roentgenographic or fluoroscopic studies. However, achlorhydria should suggest malignancy. If the acid concentration decreases on following a patient with gastric ulcer one may suspect malignancy. The change in character of the patient's symptoms or an increase in the severity of symptoms while on a medical regimen of treatment is highly suggestive of malignancy. In patients with gastric malignancy selected for medical treatment 3.2 per cent developed malignancy in five years.[33] It is impossible to determine the presence or absence of malignancy even with the abdomen open and the ulcer under digital palpation. Furthermore, with the stomach removed and the ulcer sectioned the presence or absence of malignancy cannot be determined with any degree of accuracy without microscopic sections.

FEAR OF MALIGNANCY

There is always the fear of malignancy when a gastric ulcer is treated by medical means. Where the patient is in the younger age group the incidence is less. If the ulcer heals upon roentgenographic and fluoroscopic examination, as well as symptomatically in three or four weeks of treatment, there need be little fear: however, if healing is not prompt or if the ulcer heals and recurs, surgery should be instituted. Welch believed that immediate surgery should be carried out when the patient is over fifty, in case the ulcer measures 2.5 cm. or more, if there is no free hydrochloric acid, or if the ulcer is recurrent in the lesser curvature.[73] The inability to determine the benign or malignant nature of the ulcer without microscopic examination makes any treatment other than excision

extremely hazardous. Therefore, subtotal gastric resection is the treatment of choice. The mortality of gastric resection for gastric ulcer is rather low since it is technically a much easier operation than the one for duodenal ulcer. The only exception is the gastric ulcer located high on the lesser curvature, which makes the operative technic rather difficult. The acidity usually is less than in duodenal ulcer, therefore, the end result of the operation is excellent and the incidence of jejunal ulcer is minimal.[53,75,66,54] Thus, the fear of malignancy, the ease of operation and the low mortality rate, the high rate of success with the operation, and the low incidence of jejunal ulcer make it the operation of choice over any other surgical method of treatment. For these reasons vagus resection with or without gastroenterostomy seemingly has no place in the treatment of gastric ulcer. For the same reasons gastroenterostomy without vagus section has no place in the treatment of gastric ulcer.

INCIDENCE

The incidence of duodenal ulcer is higher than gastric ulcer. Because of the greater production of acid in patients with duodenal ulcer the response to all methods of treatment is not as good. Therefore the problem of the duodenal ulcer is a more difficult one. There is, however, no fear of malignancy associated with the disease.

In duodenal ulcer there is usually a gastric acidity higher than normal and also greater than found in gastric ulcer. It is thought that the intestinal phase or after secretion is greater.[11] Clarke[10] has shown that the night secretion of gastric juice and acid is much greater in the patients with duodenal ulcer than in the normal patients or those suffering from other diseases.

The incidence of carcinoma of the duodenum or carcinoma of the duodenum in any way associated with the duodenal ulcer is extremely low. So rare is the lesion that it is of no concern clinically. With regard to gastric carcinoma associated with duodenal ulcer, Fisher[20] found the two diseases in 0.1 per cent of 45,000 patients with duodenal ulcer. The association of duodenal ulcer and gastric ulcer is thought to occur in about 1 per cent of the cases of duodenal ulcer. This low percentage of both, makes one pause to contemplate whether they are the same type of disease from the same causes. The ulcer is usually located in the first portion of the duodenum where the acid part of gastric juice strikes before being completely neutralized. The ulcer may be multiple. It is usually small, never attaining the large size so often observed in the gastric ulcer,[7] and is often found on the posterior surface of the duodenum. When a small chronic ulcer is located on the posterior surface of the duodenum it may be difficult to identify by palpation. Fixation of the duodenum to the pancreas is one of the constant findings. When the ulcer on the posterior surface of the duodenum perforates it erodes into the pancreas. The adherence to the pancreas without perforation and the erosion into the pancreas upon perforation cause great difficulty for the surgeon who wishes to remove the ulcer and free enough of the duodenum to permit a safe closure of the duodneal stump after division. Contraction from scar tissue shortens the duodenum and causes the ampullae of Vater to be closer to the ulcer area.

OPERATION DEVELOPED

In order to avoid the difficulty of separating the duodenum from the pancreas in the posterior duodenal ulcers the pyloric exclusion type of operation was developed. It has proved to be an unsatisfactory operation. However, so long as the ulcer is in the first portion of the duodenum, where the majority occur, there will be sufficient distance to safely permit excision of the ulcer and closure of the duodenum. These difficulties are not encountered in gastric ulcer, except for the posterior prepyloric ulcer that rarely erodes into the pancreas. However, Horsley[31] reported that from 1928 to 1938 he observed twenty patients with peptic ulcers that had eroded into the pancreas; nine were gastric, nine duodenal, and two jejunal. The posterior duodenal ulcer that erodes into the pancreas often erodes the superior pancreaticoduodenal artery or one of its branches. This accounts for bleeding, the most troublesome and dangerous of the complications of duodenal ulcer. Bleeding occurs more frequently from duodenal ulcer than from the gastric type.

Since all methods of treatment for duodenal ulcer frequently fail it is difficult to be dogmatic about the operation of choice. If medical treatment has failed and operation is indicated, the choice of operation undoubtedly will depend upon the results one obtains personally or upon those reported works one favors most. A great many workers have discontinued gastroenterostomy as a treatment of choice, however. Reid and Marcus[55] found that posterior no loop gastroenterostomy for organic pyloric stenosis resulted in satisfactory results in fifty-three of fifty-four patients followed for ten and twenty years. Nevertheless, it appears that the choice lay between gastric resection and vagus section with posterior gastroenterostomy.

The authors prefer the subtotal gastric resection. The advantages have already been discussed. It removes the ulcer bearing areas, it reduces the acid secreting surface, eliminates the hormone gastrin, and forces free mixing of the alkaline duodenal contents with gastric juice and its acids. If the treatment fails and a jejunal ulcer develops, vagus resection can be done. It is likewise true that the subtotal gastric resection for duodenal ulcer will be accompanied by a higher mortality than vagus resection and posterior gastroenterostomy, particularly when the ulcer is located posteriorly in the duodenum and adherent to or perforated into the pancreas.

VAGUS RESECTION

The vagus resection with posterior gastroenterostomy will be accompanied by a lower original mortality rate; however, if a jejunal ulcer develops there is no alternative except a subtotal gastric resection. This procedure in the face of gastroenterostomy with jejunal ulcer, is often a formidable operation.

Perhaps one can adopt a middle course and assert that where the duodenal ulcer is not adherent to or perforated into the pancreas it is best to do a subtotal gastric resection, so long as the patient is in good general physical condition, is not too fat, and does not have a definite barrel chest. If these conditions are encountered it is probably advisable to be content with a vagus resection and a posterior gastroenterostomy. In other words, when the operation is technically easy, a gastric resection should be done; when difficulty is encountered the easiest operation should be chosen, a vagus resection and posterior gastroenterostomy.

The treatment of the complications of peptic ulcer is not within the scope of this discussion, except as they may affect gastric resection or vagus resection. The incidence of perforation of peptic ulcer is about equal between duodenal and gastric ulcers.[39,58] However, this indicates a relatively greater incidence of perforation of gastric ulcers. In dealing with acute perforations it would appear that simple closure of the perforation and saving the patient's life are the primary considerations. Additional surgical procedures should be reserved for elective operations[22] unless there is pyloric obstruction.

In the treatment of the ulcer patient who develops pyloric obstruction the procedure is essentially the same as in the patient with intractable ulcer without obstruction, except that some workers believe there is an indication for gastroenterostomy. However, if gastroenterostomy is chosen instead of resection, a vagus resection should be added. The preoperative prepara-

tion of these patients is of the utmost importance since their nutrition may be considerably impaired. Frequently the apparent complete obstruction results from edema and spasm. Rest of the stomach by syphon drainage through a transnasal intragastric tube and adequate antispasmotic drugs often will permit tolerance of an adequate liquid diet during the period of preoperative preparation.

SERIOUS CONDITION

The complication of bleeding peptic ulcer is a serious condition and requires prompt, efficient treatment which may be surgical. It is estimated that 10 to 30 per cent bleed at some time during the course of the disease.[2] When presented with a patient who has had massive gastrointestinal bleeding indicated by hematemesis or melena, or both, there is always a serious problem of diagnosis or locating the site of bleeding. Once the diagnosis is made the next important step is to decide upon the type of treatment to be used. Collins and Knowlton[40] reported that of 2620 consecutive cases of peptic ulcer at the Cleveland Clinic 100 had massive bleeding, and during the same period of time there were forty-one patients who had bleeding from the gastrointestinal tract which was not caused by peptic ulcer. Of 141 cases the bleeding was from peptic ulcer in 71 per cent, from carcinoma of the stomach in 7 per cent, from Banti's disease in 13 per cent, and from cirrhosis of the liver in 9 per cent. If the patients have had a prior diagnosis of peptic ulcer the problem of diagnosis can be assumed to be bleeding from an ulcer, but this may be erroneous. Where there is history of ulcer symptoms the diagnosis of bleeding peptic ulcer can be considered seriously. However, Hinton[28] found 18 per cent who had bleeding from peptic ulcer but no prior symptom of peptic ulcer. Without a previous diagnosis of peptic ulcer and no ulcer symptoms one must search for all possible clues. Under such circumstances roentgenographic and fluoroscopic studies of the esophagus, stomach, and duodenum are indicated, so long as the barium is kept thin and forceful manipulation is avoided. If time permits studies of the liver are advisable. When the diagnosis of bleeding peptic ulcer can be made the problem is simplified, since surgical intervention is more logical with a positive diagnosis. Without an accurate diagnosis or without knowing the site of hemorrhage an operative procedure is likely to result in failure to find the site of bleeding and therefore no help can be obtained from the operation.

QUESTION ANSWERED

If the diagnosis of peptic ulcer is made in a patient with massive gastrointestinal bleeding the first important question is answered. Hemorrhage from peptic ulcer is more common from the duodenal than the gastric ulcer. In case the hemorrhage is from the duodenum it is more likely from a posterior ulcer that has eroded into the superior pancreaticoduodenal artery or one of its branches, and if from the gastric ulcer it is probably located on the greater curvature.[27]

In order to determine the method of treatment one must decide whether the bleeding will stop spontaneously or whether it will continue until death. There is no infallible method of determining these facts. Surely a period of observation and medical treatment is indicated. There are many methods advocated. However, it seems best to feed the patient a **pureed diet** and to give antacids and antispasmodics after the method described by Meulengracht.[44] Repeated transfusions of whole citrated blood are imperative. An hourly determination of the red blood cell count, hemoglobin, and hematocrit is necessary. After a few hours one should be able to determine whether bleeding is diminishing or has stopped. If it is continuing an operation is indicated, provided ample blood for transfusion is available. Other factors that will influence the decision in favor of operation will be a patient over fifty years of age, a history of repeated hemorrhages,[30] and bleeding that has started while the patient is receiving adequate medical treatment.[29] If an operation is decided upon it should be carried out, if possible, within the first twenty-four hours of bleeding. In the early hours of severe bleeding the replacement of blood will restore the patient to a satisfactory condition. If many hours of severe bleeding elapse there will be a dislocation of body fluids that cannot be restored by the simple replacement of blood. The blood volume will be restored to normal from tissue fluids.

GASTRIC RESECTION

Gastric resection is the procedure of choice in patients with hemorrhage. Of course, the ulcer must be removed. There are situations where one must be content with opening the stomach or duodenum and suturing the bleeding vessel. Surely vagus resection with or without gastroenterostomy has no place in the treatment of hemorrhage, but it has been recommended.

The jejunal (gastrojejunal, marginal, stomal) ulcer is always a complication of gastric surgery. Woelfer[75] reported the first gastroenterostomy in 1881 and nineteen years later Braun[9] recorded the first jejunal ulcer. Its etiology and incidence have been discussed adequately. The ulcer is rarely in the gastric mucosa; seldom is it found at the junction of the gastric and jejunal mucosa; most commonly it is jejunal.[65] It is unusual for it to be located in the afferent side of the jejunal loop; usually it is opposite the gastric stoma or in the efferent loop. The perforation of jejunal ulcer into the free peritoneal cavity occurs in less than 1 per cent. The jejunal ulcer may perforate into the colon causing the gastrojejunocolic fistula. This unfortunate condition is thought to occur in from 11 to 14 per cent of jejunal ulcers.[43] Pain and hemorrhage are the most frequent symptoms of jejunal ulcer.

Medical treatment for jejunal ulcer is notoriously ineffective, therefore surgery is usually indicated. Whether the jejunal ulcer is the result of gastroenterostomy or partial gastric resection will for the most part determine the type of surgical treatment. In either instance the patient should undergo a vagus resection or a subtotal gastric resection.

EASIEST OPERATION

In the event the jejunal ulcer is the result of a gastroenterostomy the vagus resection would be the easiest operation so long as the gastroenterostomy is functioning normally.[25,57] If, however, it is not functioning adequately, subtotal gastric resection is definitely the procedure to be selected. When the jejunal ulcer is the result of an adequate gastric resection, vagus resection is the operation of choice.[25,57] The vagus nerve resection should be accomplished by the thoracoabdominal route in order to assure a complete disruption of the nerve. The combination of an adequate gastric resection and vagus resection usually results in achlorhydria.

In the event of perforation of a jejunal ulcer into the free peritoneal cavity the treatment should be simple closure of the perforation. Where gastrojejunocolic fistula develops subtotal resection of the stomach with the other necessary bowel resection and anastomosis is the operation of choice.[34,38]

CONCLUSIONS

1. Experimental and clinical evidence indicates that gastric juice with high acid concentration is the most important factor in the initiation and chronicity of peptic ulcer.
2. Treatment, both medical and surgical, is directed at the reduction of acid concentration.
3. Subtotal gastric resection is the preferred treatment for gastric ulcer because of the high cure rate, low mortality rate, and the ever present fear of gastric malignancy.

4. When it is technically difficult to perform a subtotal gastric resection for duodenal ulcer it should be treated by vagus nerve resection and posterior gastroenterostomy.
5. Jejunal ulcer, after adequate subtotal gastric resection, is best treated by transthoracic vagus nerve resection.

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TRANSABDOMINAL VAGOTOMY, A POINT IN TECHNIC FACILITATING THE PROCEDURE

By Bucky L. Burditt, M. D., Del Rio, Texas

Transabdominal vagotomy is a new and useful operative procedure, acclaimed by some and denounced by others, in the treatment of peptic ulcer. It is not a difficult operative procedure for a surgeon versed with the anatomy of the upper abdomen. It can be technically difficult however, if one point is not kept in mind: proper mobilization of the oesophagus. Professors of surgery too often make the mistake of passing over this point too lightly, with such a statement as, "and the oesophagus is exposed; then you feel for the vagus nerves, which feel just like banjo strings — these you isolate, cut, tie above and below, taking out a segment of each nerve". Passing over something such as this lightly is a blunder in our medical teachings.

Usually the transabdominal approach is used now, in preference to the transthoracic, so it behooves all of us to familiarize ourselves with the best and most accepted method, if we approve of doing the operation in the first place. Ordinarily a long left rectus incision is used, from the xiphoid cartilage to 3 to 4 centimeters to the left of the umbilicus, that is, if you are only going to do a vagotomy. A right rectus incision is made if one thinks it necessary to explore the gallbladder, a duodenal ulcer, appendix, etcetera. Anesthesia with perfect relaxation, such as cyclopropane, carrying the patient nearly to the stage of respiratory arrest often making it necessary for the anesthetist to breathe for the patient, is necessary. The ligamentum teres of the liver is cut and ligated, and the upper bite is held with an Oschner clamp for traction.

LEFT LOBE

The left lobe of the liver is retracted to the right with a Deaver retractor, and the left costal margin is pulled to the left with a Balfour end-piece, both retractors being padded with moistened abdominal packs. This brings the stretched coronary (triangular) ligament of the left lobe of the liver into view. This is an avascular structure but its limits should be palpated while it is on a stretch, to avoid cutting the left lobe of the liver which occasionally extends quite far down into it. After defining it between the thumb and index finger, it is cut with long curved scissors, the lateral fibers first, finally cutting down to the lobe of the liver itself medially. Occasionally it may be necessary to control oozing from the liver site by transfixion ties. This exposes the reflection of the diaphragmatic peritoneum onto the stomach and the oesophagus. A knuckle of this peritoneum is picked up with a long toothed thumb forceps and an incision is made transversely through it. This is extended laterally for about one inch. There should be a gastric suction tube in the stomach, as this facilitates localization of the oesophagus at this point of the operation. The index finger of the right hand is then inserted through the oesophageal hiatus in the diaphragm, bluntly upwards along the anterior surface of the oesophagus, pushing the loose areolar tissue laterally and superiorly from the organ for a distance of one to one and one-half inches in the upward direction.

INDEX FINGER

After this is performed it is easy to swing the index finger around the left side of the oesophagus and then to the posterior and right side of it delivering it into the abdominal cavity. As much as 4 or 5 inches of the oesophagus can be mobilized downward easily. The left (anterior) vagus usually lies on the anterior surface and slightly to the left side: the right (posterior) usually lies posteriorly and slightly to the right of the center of the oesophagus. They are about as large as the body of a match, and feel somewhat like banjo strings as they are palpated between the index finger and thumb. They are then clamped, cut, ligated with cotton and divided. An effort is made to resect one-half to three-fourths of an inch of each vagus. The divided peritoneum over the oesophagus is then closed with several interrupted sutures of fine cotton (this step is not absolutely necessary) and the operation is completed. The coronary ligament of the liver is not reapproximated.

COMMENT AND SUMMARY

A point in technic in the operation of transabdominal vagotomy is brought out, that of mobilizing the oesophagus bluntly with the finger inserted through the oesophageal hiatus. This point is too often passed over lightly, or not mentioned at all by professors of surgery and those writing present day medical papers on the subject. Detailed technic of the operation including an easy and safe technic of mobilizing the oesophagus is presented.

ANTICOAGULANTS

Rectal Administration Of Dicumarol In A Case Of Mesenteric Venous Thrombosis

Seltzer, H. S., J. Michigan M. S. 50:59, 1951

Although Dicumarol is not generally considered effective when administered per rectum, therapeutic response was obtained in the patient described following rectal administration of the anticoagulant in individual doses of 100 to 800 mg. In this instance, oral administration was precluded by the necessity of continuous Wangensteen suction.

Clinical Clippings, April, 1951.

CORTISONE

Occurrence Of Convulsive Seizures During Treatment Of Asthma With Cortisone Acetate

Lowell, F. C., New England J. M. 244:9, 1951

Retention of sodium chloride and water following administration of cortisone is suggested as a cause of four convulsive seizures occurring in a patient receiving the hormone for treatment of bronchial asthma.

Boston U.

Clinical Clippings, April, 1951.

INFLUENZA

Development Of Influenza Epidemics: Public Health

Logan, W. P. D. & MacKay, D. G.
Lancet 1:284, 1951

This paper presents a review of epidemic influenza in England and Wales during epidemic years from 1918 to date . Two significant features are evident. During each outbreak the rate of rise in incidence and percentage of deaths in older age groups has steadily increased.

Clinical Clippings, April, 1951.

MEASURING THE CARDIAC HANDICAP*

By Robert J. Brotchner,**M. D. ,F. A. C. P.
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The National Council on Rehabilitation has proposed the following definition of **rehabilitation**: "The restoration of the handicapped to the fullest physical, mental, social, vocational, and economic usefulness of which they are capable."

Measuring the cardiac handicap is an essential and necessarily early step in achieving this goal. In evaluating the cardiac disability we must pass through a series of evaluations and decisions.

The first step is the evaluation of the presumptive diagnosis; Does the patient actually have heart disease? Many times rehabilitation will be accomplished by competent cardiac consultation which will indicate that no heart disease is present. It is regrettable but true that many cardiac cripples have had poor medical service. Some cases require psychotherapy to recover from such diagnoses made through lack of skill.

Next is the case where the diagnosis of "heart disease" is correct, but the type of lesion is not determined. Here our first function is complete diagnosis and suitable medical or surgical treatment. Our goal is to bring our patient to maximal efficiency and comfort.

An important part of the diagnosis in a cardiac patient is some sort of evaluation of **actual physical capacity.**[1] This is best expressed, not by any set standards or functional tests, but by the ability of the patient to carry on his routine daily activity, a variable which must be considered for every patient. A simple classification is as follows:

1. Full normal activity possible without cardiac symptoms.
2. (a) Activity slightly restricted by symptoms.
   (b) Activity moderately restricted by symptoms.
   (c) Activity greatly restricted by symptoms.
3. No activity possible without symptoms.
4. Symptoms even at rest.

The advice "Take it easy" is worse than useless. The patient and the counselor need to know how much and what kind of work can be done with safety for the patient and for his fellow workers.

A complete cardiovascular diagnosis should include four features: (1) etiology, or cause; (2) structural change; (3) disorders of function; (4) physical capacity. Examples:

> Rheumatic heart disease with mitral stenosis, auricular fibrillation, and congestive failure; activity greatly restricted by symptoms.
>
> Congenital cardiovascular disease with patency of the ductus arteriosus; full normal activity possible without symptoms.

Not only must we evaluate the cardiac disability as of the date of examination; we should also attempt to estimate the prognosis of the individual's disease. If he will deteriorate gradually over many years, the objective can be a different one from that of a patient whose downhill course is likely to be rapid.

Throughout our examinations and interviews with the person with heart disease we should be building the foundation for his rehabilitation. We must convince the patient and the public that the idea that "heart trouble" usually means death overnight or within a short time is out of line with fact. Physicians and laymen should recognize that heart disease is, as a rule, a chronic disease with varying rates of progression — one with which many can live to almost normal expectancy.

A number of fundamental procedures are used by the physician to measure the cardiac handicap.

1. **History.** This continues to be one of the most valuable items in the evaluation of each patient. When were first symptoms noticed? What has the patient been able to do? What activities cause symptoms? What is his industrial experience? Is he able to perform his duties in his present occupation without symptoms?

2. **Physical Examination.** Does this reveal any evidence of heart disease? Are there any signs of reduction of cardiac reserve — moisture in the lungs? A large, tender liver? Swelling of the ankles? Measurement of vital capacity is a valuable adjunct.

3. **Laboratory.** Is anemia present? Is there evidence that rheumatic fever is active? If there are findings suggestive of hyperthyroidism, measurement of the basal metabolic rate may lead us to suitable treatment and cure by confirming a presumptive diagnosis of "hyperthyroid heart disease."

4. **Fluoroscopy** gives us an objective measurement of the size and contour of the heart and great vessels. Ideally, we should measure the heart's transverse ameter by orthodiography. Enlargement not only aids aids us in diagnosis but also is invaluable in prognosis. Enlargement will often be detected by fluoroscopy long before it is apparent on the standard chest x-ray which gives us only one view during a fleeting fraction of a second.

5. An **electrocardiogram** is the last of the fundamental studies we should require for cardiac evaluation as of this date. It should include[2] the standard limb leads, the augmented unipolar limb leads, and precordial leads V1 through V6. It is of greatest value (a) in hypertension, where it may reveal evidence of heart strain before it is apparent by fluoroscopy or x-ray of the chest, (b) in arrhythmias, in which it enables us to distinguish serious from unimportant disturbances in heart rate, and (c) in many cases of coronary artery disease.

One valuable use of the augmented unipolar limb leads is the proper evaluation of the Significance of Q_3 pattern often seen when only standard leads are taken. Recent studies[3] have shown that if the Q_{AVF} is .04 seconds or greater in duration and is equal to or greater than 25 per cent of R_{AVF} there is great likelihood of old posterior myocardial infarct.

Special studies can only be mentioned in a paper of this nature. Some of them may be considered a **must** before many months have passed. Cardiac catherization studies[4,5] and roentgenkymography[6,7] have proven of great clinical value. Ballistocardiography,[8] electrokymography,[9,10] and the flicker photometer[11] are useful in clinical research and already appear to be of some value to the clinician. Oxygen capacity and renal flow studies[12] can demonstrate reduced cardiac efficiency long before patients have symptoms.

One other measuring rod we should not ignore is the statistical study, of the type made by life insurance companies. Recently a follow-up of a group of

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UNIVERSITY OF MICHIGAN

men eligible for total and permanent disability[13] demonstrated that of those with coronary thrombosis, 70 per cent survived at the end of five years, slightly more than 50 per cent at the end of ten years, and 43 per cent at the end of twelve years. Of those arteriosclerotic and hypertensive patients complicated by kidney or brain involvements, 40 per cent survived five years and 17 per cent ten years. Of the chronic valvular heart disease group, largely with decompensated rheumatic heart disease (Remember, these were certified for total and permanent disability at the onset!), 44 per cent were alive at the end of five years, 27 per cent at the end of ten years and 22 per cent at the end of twelve years. They concluded that a large number of cardiacs can enjoy many years of useful life if they have adequate medical supervision and live within their physical limitations.

Further development of techniques of diagnosis and measurement will give us still more objective evaluation of cardiac capacity than is possible today. But we must never forget that the accuracy and completeness of evaluation will always be commensurate with the training, experience, and judgment of the physician consulted.

We must push aside passive defeatists, refuse to accept vague generalities, and insist upon the complete and accurate evaluation of each patient as an individual if we are to mend broken spirits by helping damaged hearts.

It is estimated that 10,000,000 men, women, and children in the United States today have some form of heart or blood vessel disease. In 1948, the last year for which official figures are available, cardiovascular diseases killed 637,679 persons, accounting for 44 per cent of all the nation's deaths. Over the age of 45 during man's most productive years, one out of every two persons dies of a cardiovascular disease. One out of every six deaths in the military age group, 20-39, is caused by one of these diseases.

—*The American Heart,* January-March, 1951.

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